

AVIATION WEEK

AUG. 11, 1947

INCORPORATING AVIATION AND AVIATION NEWS

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THE AVIATION WEEK

CHARGE TO CHANGE—Aviation attention focused on Capitol Hill and the charges of Howard Hughes against Sen. Owen Brewster has been partially diverted to a change in the Government's aviation administration—John B. Altson for William A. M. Berke as Assistant Secretary of Commerce for Air. Somewhere along the line in the closing days of Congress, the selection of George A. Street, of Columbus, Ohio, picked some months ago to succeed Berke, ran into opposition. His name never went to Congress.

Appointment of Altson was a complete surprise. In dubious scrutiny of his background relieved some of the opposition. In addition to an excellent war record as an aviator, Altson worked with Commerce Secretary Harman when the latter was Ambassador to Moscow. Although Altson has never held a civilian aviation post that could be considered a training ground for his new job, there is some opinion that might be an asset. He could bring a fresh approach and no prejudices to a badly needed situation.

NO COMFORT FOR CAA—One thing seems apparent. His appointment should bring no end to the pressure on CAA Administrator T. F. Wright reportedly denied to deal only with Secretary Harman on aviation matters. At a recent post CAA-Army-aerody conference, Wright asked an infantry aviator to walk with the Army representatives as "I don't get along with them very well." Altson, in the regular Army, before the war, served as a colonel in the AAF.

BREWSTER'S BOOMERANG—As the Hughes investigation barrels along like a train finding something he never knew he lost, Washington observers were and more are coming to the belief that if Sen. Owen Brewster, in closing up the inquiry, thought he was throwing his hat in the ring for the Republican vice presidential nomination, he actually was throwing a boomerang.

Although Brewster is not a nemesis of the investigating subcommittee, he has turned up as one of the main figures by virtue of Hughes charges that the Maine Senator used the threat of an investigation to force a TWA-Pan American Airways merger. The fact that merger discussions took place at the time Hughes and they did, and that Brewster has been a longtime friend of Pan American, and that Brewster did try to persuade Hughes to endorse the chosen in strongest proposal, all add up to a possible uncomfortable future for Brewster's political ambitions.

With the investigation rambling all over the air map, Hughes' troubles with TWA, and vice versa, are

part of the picture. TWA never has received the second \$5,000,000 Hughes loan, nor the RFC loan which Hughes said he would attempt to negotiate when he reorganized the company last spring. On top of reports that the Hughes study cash is running low, comes strong indications of a growing interest in TWA by the defunct funds. This interest leads further significance to the meeting of TWA New York and Washington offices to Wilmington scheduled for early fall.

SECRET AS A PARTY LINE—Further light has been shed on the manner in which the investigation is being conducted, leaving little doubt as to the method which prompted it. Elwyn Rosenthal, one of the show before Hughes appeared on the scene, asked who had released to the newspapers the Detroit account of entertainment expenses of Hughes' press agent John W. Meyer, which were given to the subcommittee as "secret" sources. Chairman Homer Ferguson said "I haven't seen this." Actually, the list of expenses was mimeographed and handed to press representatives by committee clerks.

CHANGE IN SAFETY—While the Altson appointment and the Hughes investigation called for attention, the Presidential Air Safety Board was slipping out of the limelight. The change that characterized other aviation developments has been modified here, too. After a hot start, the Board has cooled off. Some close to the scene say it has bogged down. CAA Chairman James M. Leach insisted the board remain at work all summer, but slow recent progress may be due to its preoccupation with other duties.

AMPHIBIOUS OPERATION—The state of change in the armed services following the merger was to be expected, but not the extent to which it has gone. The Navy is not viable, and a triple change about it, but career pilots have resigned their Navy commissions to accept commissions in the new, autonomous U. S. Air Force. One was an Annapolis graduate and a lieutenant commander. He is now a lieutenant colonel in USAF. An Avionics reports it has processed several pilots who resigned Navy commissions and accepted commissions in the Air Force Reserve. A further indignity to the Navy point of view is that Joe Foss, Congressional Medal of Honor winner and former Marine pilot, a now Commander of the South Dakota Air National Guard, part of the USAF.

The transfer from the seaboard to the airborne air force is just a trickle, but it may grow.

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NEWS DIGEST

DOMESTIC

Form 0-25 "Fusée Destructive" broke two closed-circuit distance records 6,234 miles over a Pittsburgh-Palm Beach, Fla., route averaging 277 mph and 8,955 miles over a Pittsburgh-Palm Beach-Palm Springs, Ariz., Transpacific route averaging 277 mph. Lt. Col. Gilbert F. Laster, AAF Strategic Air Command, flew both routes.

Frank H. Rowell, organizer of the Aero Factors Aircraft Association in 1917, died at Newton, Pa. He organized the original Wright Company in 1909, served as president of Empire Airplane Co. in 1911, vice president and director of Eastern Aeroplane and Motor Co. and in the same capacity at the Edward G. Ball Mfg. Co. CAA Administrator E. F. Wright quoted the several Federalized expert opinions for the construction of improvement of 908 airports at a cost to the government of \$36,500,190 with local or state agencies paying up to additional \$70,215,000.

Air Force Association will publish *Air Force Magazine*, produced during the past year by Philip Arden Publishing Co. Dr. A. C. Kewer has joined the staff of Aerobics Laboratories Laboratory, Mount, New York to supervising research, design and instruction. He was formerly with the Manhattan Project and Republic Aviation Corp.

FINANCIAL

Mid-Continental Airlines reports net profit of \$5,954 during 1960 against \$14,851 profit the same month a year ago.

Minneapolis-Honeywell Regulator Co. had a net income, after provision for taxes, of \$3,302,143 for the last six months of 1960. This is compared with pre-provided dividends, to \$251 per share on 1,240,000 shares of common stock outstanding. It compares with net income for the corresponding 1956 period of \$1,080,866 or \$1.14 per share.

AVCO Manufacturing Corp. reports net income for the six months ended July 31, 1960, after taxes, totaled \$3,171,119 equal after preferred dividends to 44 cents per share on 6,613,416 shares of common stock outstanding. Net assets for the period were \$40,797,215.

FOREIGN

British Air Transport agreement between India and France has been signed at New Delhi.

Air France plans to replace its transport fleet with new jets with 30 percent on shipments over 100 lb. effective Aug. 30.

Monday of Civil Aviation assumes that BORG has acquired a second hand Lockheed Constellation for transporting its use on trans-Atlantic routes.

1500 POUNDS SAVED BY BUILDING THIS BODY OF REVERE MAGNESIUM



Penn. Heavy Truck Body, Inc., Detroit

Spreckels Assembly Methods Permit High Production at Moderate Cost

The new magnesium alloy truck body built by R. K. Spreckels of Denver was for use as its own general delivery and carrier business. The newly improved bus is functionally the most advanced truck body ever to be constructed and will supersede all other bodies. After thorough investigation of available body materials, Spreckels standardized on Revere magnesium alloy extruded shapes and sheets. These are, he says, "quite possible" "not only to save the maximum amount of weight, but to design for maximum strength and minimum input." The bodies are built in sub-assemblies, which are then stamped into solid structural units, permanently joined by the Black Lockbolt of the body-building type. After stamping, the truck, replaceable rub rail is stamped into place and the door hinge, interior finishing and painting follow, according to individual job specifications.

All this adds up, according to Mr. Spreckels, "a durable truck bodies that will weigh 1500 pounds less and pay for their added cost in a very short time." He advises, drivers report that trucks equipped with these magnesium

bodies handle as easily as a passenger car, thus reducing driver fatigue.

If you operate vehicles for highway or in urban operation, Revere magnesium alloys can help you save gas, oil, tires and other operating expenses or enable you to carry additional payload. With Revere sheets and stamped shapes, run or your body builder can produce truck panel bodies of magnesium alloy easily and quickly. Details available for proper shipment, these Revere materials can be assembled into bodies by means of the simplest fabricating methods.

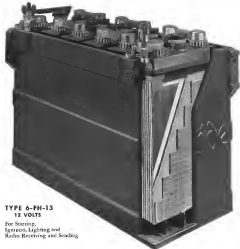
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Hughes Levels New Charges In Pan American-TWA Feud

Claims Brewster used Senate probe threat to force airline merger; reveals War Department threat to turn TWA Stratoliners over to PAA.

The long-standing TWA-Pan American Airways feud now threatened its quietest end again last week, as Howard Hughes, TWA's executive stockholder, blasted Senate Owen Brewster (R., Miami) with new charges during the chairman's air Senate War Investigating Committee with Pan American proposed to keep TWA out of its transcontinental operations. The Senate committee is currently probing Hughes' wartime contacts for the SP-1 photo plane and the HK-1, 130-ton flying boat.

Hughes charges were made in a series of Los Angeles press conferences and open letters to Brewster published in the Los Angeles Times after that paper alleged Hughes ate front page for six days in an air gun case.

► **Confession Revealed**—Hughes revealed that he had conferred with Juan Trippe, Pan American president, last winter regarding merger of TWA and PAA and that he had failed to disclose the merger proposal after questioning it for 30 days, because "he did not have any more evidence for other TWA stockholders."

However, News reported on March 1 that documents were under way between Howard Hughes and Pan American officials on possibilities of merging the two airlines to give Pan American its long sought domestic routes and add TWA's famed airlines.

► **College Denial**—Hughes' denial earlier earlier last week that he had been in contact with Pan American president and former Republican national committee chairman, Charles McNamara, drew the University of California, taking evidence two panels of TWA, issued a statement to TWA on plane that "no reports of a merger of TWA and Pan American Airways are connected and verifiable and without reasonable foundation."

Hughes also charged that Brewster made an "obvious attempt" to "intimidate and coerce us" (Hughes also charging TWA with Pan American Airways in offering to sell off his ownership of the Hughes Aircraft Co.'s various contracts of the merger).

was accomplished. The attempt, Hughes charged, was made at luncheon at Coast star's Mayflower Hotel suite during the week of Feb. 10.

► **Airline News Report**—Aviation News reported in its Feb. 14 issue that "The leading argument of the committee before on Capitol Hill is conducting a continuous publicity campaign on Pan and Hughes' Senate Brewster and the War Coast Airlines executive have spent much time together recently, some of their meetings, Hughes said, to be 'hanging' around the committee company side. And other TWA executives wonder whether it is because of the threat of a full fledged case into the Hughes-Kaiser case plan filed by Brewster's War Investigating Committee."

"Brewster was perfectly fair," Hughes denied. "He had his cards on the table. 'Under the circumstances and under the threat of investigation an obviously correct in the first place, a Maxwell's house to measure me into the merger with Pan American means I did not consider that going in, to this demand would soon be defined on my part."

"Since I left the bulk of the investigation on legislation, I did not consider that an examination would be a case. I never did make a decision on the matter, because, at the end of my investigation the merger deal Juan Trippe offered was not one I considered profitable from the standpoint of other stockholders in our company, TWA."

► **More Pleasant Hours**—Hughes also charged that Brewster accepted his own position and extensive endorsement from Pan American. He alleged that Brewster spent "pleasant weekends" at the home of Sam Price at Hinge Island, Fla. and "many pleasant hours" being entertained in Washington by Price, Juan Trippe and Bill Mulvan, PAA public relations executive. Brewster denied any connection with Pan American.

The Brewster investigation only began, Hughes charged, when TWA challenged

Pan American on the North Atlantic. When it happened, Jack Fox, then TWA president, who later resigned over policy differences with Hughes, told him:

"However, you are going to know that Pan American Airways has the biggest, most complex and strongest political machine that has ever hit Washington. Juan Trippe feels you have moved in on his territory, which he considers the entire world outside the U.S., and he is going to make you hit miserable. You have no other the impulse to which these people will go."

"Juan Trippe and Brewster made it very clear to me that they were committed TWA in order to put their considerable money and influence behind Congress and enter it a lot," Hughes continued. "They could do it and do the threat of the other over-see unless it then could not get TWA as their team. When Juan Trippe, who already has the biggest lobby in the world, would wind up with a complete monopoly, economically and quite legally, getting all the money as he has and all business and taking over their routes and airports."

► **Smothered Deal**—Hughes also charged that during the war the War Department threatened to turn TWA's Pan Boeing Stratoliners over from the airlines and turn them over to Pan American to fly the Atlantic.

Brewster's presence at the Senate later state and Foreign Commerce Committee, which passed an airline merger, is a real and several because of the nature of not having two airlines from the same state on the same committee. Senate William White, chief of staff of that committee.

Brewster has been concerned with TWA's financial affairs since last January. In kind of the airline industry, he began an investigation into airline finances at which time he learned that TWA Chairman Charles Smith is another source in TWA's financial condition. This investigation was related in form of a public of air line affairs after a series of full airline news death bed made.

Both Brewster and Hughes have asked the Justice Department to investigate the Hughes charges. Brewster has asked to take the trial in a private office before the Senate War Investigating Committee in some questions as Hughes' allegations Brewster introduced legislation closing the committee action as the last session of Congress but it never was reported out of the Senate Judiciary and Foreign Commerce Committee. "So far," he has passed three bills previously in Congress.

Douglas DC-9 Proposed As Replacement for DC-3

Specifications of new transport circulated to airlines for comment; will carry 28 passengers, cruise at 242 mph.

Douglas Aircraft Co. has finally decided on one plan for a proposed replacement of its famous DC-3—a model that would now be built in the backcountry of Consolidated Vultee and Glenn L. Martin.

At yet the Douglas DC-9 is only a proposal. Drawings and specifications are being considered by airlines to test the market. The company has no word yet on whether it will not choose to build the DC-9 but otherwise build with the company that for years was the greatest supplier of transport planes with the new design meet a DC-3 requirement—generally the top of the design is more than a study.

■ **10,000 lb. Load:** With 10,000 lb. plus useful load, accommodations for 28 passengers, and cruise speed of about 242 mph, the DC-9 would meet most competition with the Airbusworth 28-passenger British Model 34 Fourteen three it does with the 40-passenger, faster Convair Lear, Model 232 at 301. In fact, the DC-9 is now primary with the Douglas and Martin planes used as a performance test, even what would be traced a philosophical loss.

Douglas apparently believes that the airlines said, is a DC-9 replacement, not a 40-passenger, 150-200 mph transport, but a smaller, shorter plane. The airplane could speed (75 mph) in the DC-9 and shorter take off and landing runs. It is on that concept, plus the low cruise rate of the Douglas error. The DC-9 concept seems to be meeting its target.

Now factor being considered by both airline and manufacturing competitors at the time elapsed. If the DC-9 is built, production probably is in last two years now. The Martin and Convair airplane should be in airline use by the last of the year. The question seems to be how long an airline said to replace DC-3s as which it may be losing money. It is a two mile test to go on airline airlines to the DC-9 proposal, although United, for one, is not inclined more than passing interest.

■ **Deliver Proving:** The long delay in the company's announcement of its project plan at the time pointed at the price actually built have about the same time as the DC-3 the price Martinair which was built only in a broader sense for AAR. Anticipating possible airline reaction in the competitive feature of the DC-9, Douglas began studying a more conventional design

as an alternative. When the airline says that to the Martinair design period to be met, the DC-9 begins shaping up.

The new plan in appearance is constrained in the DC-3 is not conventional (no slatted) except for the high aspect ratio wing.

It has wings leading gear with single nose wheel and dual main wheels. Passenger door is on the left side of the wing, although an alternative arrangement would give a door opening under the tail. Cabin can be partitioned to suit. Performance would add about 515,000 or 575,000 to the total cost \$200,000.

Comparison of the proposed DC-9 and the DC-3 follows:

	DC-9	DC-3
Wing	50 ft. 0 in.	42 ft. 0 in.
Length	42 ft. 0 in.	32 ft. 0 in.
Wing Weight	10,000 lb.	10,000 lb.
Ground Load	10,000 lb.	10,000 lb.
Wing Area	610 sq. ft.	410 sq. ft.
Wing Loading	16.4 lb./sq. ft.	24.4 lb./sq. ft.
Span	42 ft. 0 in.	32 ft. 0 in.
Wing Area	610 sq. ft.	410 sq. ft.
Wing Loading	16.4 lb./sq. ft.	24.4 lb./sq. ft.
Wing Area	610 sq. ft.	410 sq. ft.
Wing Loading	16.4 lb./sq. ft.	24.4 lb./sq. ft.

The DC-9 will be powered by Wright Cyclone 1020 engines rated at 1,475 hp. for take off, and 1,275 hp. with water. The cruise speed of 242 mph could be reduced to 75 mph per engine. The airplane could also use the new 700 and 1,000-hp. 2750 hp. gas turbine at 1,600 hp. for take off. Data listed take off distance at gross weight at 1,475 ft., and landing distance, 1,500 ft.



ARTIST'S SKETCH, based on company drawings, of Douglas DC-9

While the proposal for the DC-9 type seen Douglas is using as a DC-3 replacement, some indication of the company's thoughts on what will follow as DC-3s are seen in a paper prepared for delivery at last week's Los Angeles meeting at the last time of the Aeronautical Sciences by R. S. Sherrill, Douglas representative. In the Sherrill outline, a 40-passenger, 12,000 lb. payload transport produced in late turbo jet engines only at 9,500 lb. static thrust.

■ **Proposed Jet:** Just as in the case of the DC-9, there is no evidence that the company, in the late conventional construction of the jet transport. If the transport in theory could provide a market sufficient to pay engineering and testing costs, and if no better design were developed subsequently, the Douglas jet transport probably would continue the following:

- Highly streamlined fuselage and sharp wing-back of wing and tail, the wing sweep reaching a maximum of 37.5 degrees
- Cruising speed of 490 mph at 35,000 ft. with top speed about 500 mph
- Engine rated of 700 hp.

Sherrill told Aviation Week that "the design studies were prepared for the purpose of the demonstration of a jet transport that could be built with engineering knowledge available at the time."

Sherrill emphasized that the jet transport does not represent any Douglas proposal for a new transport now contemplated for production. The status of the DC-9 is only slightly better. However, with the Air Force apparently back in the market for transport, it could be that Douglas—or its other manufacturers—hope that government money will be forthcoming for most development costs of airplanes that may later be adaptable for the commercial market.

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Financial Strength, Manufacturing Experience

Texas is one of the Southwest's major post-war industrial firms. Since sales in 1946 totaled more than \$5,000,000 with more than \$4,000,000 gross income scheduled for the current year. Texas

is ranked by Fortune magazine of North American Airlines as 1,000,000 square feet of the former N.A.A. plant near Dallas. Another 2,000 skilled workers are employed in the new modern plant and about 90% of them are experienced former North American Airlines employees. Texas' many skills and manufacturing activities help guarantee reliability and security for both pilots and customers. Production of the Swift is not new to Texas. In 1930 Swift was produced on contract for Globe Aircraft Corporation and 40% of the component parts by all Globe Swift since Texas made.

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The Civil Aeronautics Administration has certified Texas as an aircraft manufacturer, assembler, and modification plant. Contracts are now in the shop for the U. S. Army Air Force and several domestic and foreign airlines. Included Airplane Co. and the new aviation contract products. Texas has plenty of plant and plenty of "know how" to build and aircraft quality into the new Swift.

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Now you can get into new Globe Swift for \$1,750, at the Standard Swift of \$1,750. Same price to build today for buying prices. Same with maintenance and by giving you the most complete pre-delivery.

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How much more do you think it cost to make them Stainless? We're willing to bet it cost nothing extra. Why? Because parts like these join faster and easier in Stainless Steel. They don't have to be played either. And because Stainless Steel is so tough and strong-winner, lighter sections can be used to do the job.

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Adventures there are applications where the use of Stainless Steel does add to first cost. But in the long run Stainless assures money-saving advantages were here. Stainless provides practical immunity to corrosion, outstanding resistance to wear, and abrasion, a smooth surface

which needs no coating or painting, and endurance far greater than ordinary materials. In addition to those places, such as exhaust systems, where only with Stainless has it been possible to provide the necessary resistance to eroding heat—you will find many other uses for Stainless where it will improve performance or appearance.

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UNITED STATES STEEL SUPPLY COMPANY (Wholesale Distribution), Chicago
UNITED STATES STEEL EXPORT COMPANY, New York

CAA Tests Slated For Convair Liner

Official CAA flight tests of the Convair 440 "Convair Liner"—new designation for the Model 240—were scheduled to begin last week, following a month of CAA ground inspection. Robert Cass, CAA South Region engineering pilot, tentatively has been named to do the flight tests, and James Ross has been named the flight engineer supervisor.

An earlier report that the new Convair had already begun tests seemed from the fact that the company would also get the plane through CAA tests for its own certification.

Modifications to the jet exhaust cooling system include a shortening of the exhaust pipe, which now terminates about two feet ahead of the wing trailing edge. The order modification caused the pipe completely to the trailing edge. Stainless steel tanks protect the trailing edge area from heat damage. The aircraft is the last Convair design that the company, in addition to providing engine cooling at rest and in flight climb, produces a thrust of 800 lb. per engine at 2400 ft.

Convair has developed magnetic control surfaces, ordered by the Air Force for its fleet, which use about 50 lb. per sq. ft. plane. A shiver load detection test conducted recently made use of an experimental magnetic rodless shaker to provide a strength, slightly exceeding that of the comparable dural member.

CW, Union Sign New Wage Pact

A strike at the Columbus, Ohio, plant of the Curtiss-Wright Corp. was averted when an agreement was reached between management and the UAW-CIO after a 32-day session.

A spokesman for the company, said the new wage agreement calls for pay in excess of the area wage and will be for 1,500 employees of the engine plant. Voluntary checkoff of dues was also included in the agreement.

The company said the pact will add \$900,000 a year to the current payroll. A month previously the plant plant covered 10% as less than an agreement and the other unit signed employees get when they return. This, together with the latest wage agreement, added \$900,000 a year to the payroll. The contract is for two years with a wage increase after one year. The wage rate is scheduled to June 30 of this year. There is a yearly cost-of-living and a provision that in the event of a wildcat strike the union contract be used under the Telford-Harley clause.

A walk program to the agreement was the subject of the beginning schedule to call a strike if negotiations bogged down. The union requested its contract as of Aug. 4, last negotiations resumed and an

Briefing Production News

North American Aviation, Inc. has completed 35 of its ordered 250 F-8E jets. These Navy F-11 fighters have been built and are undergoing tests. Two B-65 jet bombers are being assembled at the main plant on Los Angeles Airport, while a production line for this plane is being set up in an unused Douglas building at Long Beach airport.

Chance Vought Div. of United Aircraft Corp. has completed at Fort Worth and the first production F-105-4 was due to roll off the line earlier this month.

McDonnell Aircraft Corp. has granted wage increases totaling more than \$100,000 annually to 3,500 employees, members of the International Association of Machinists. Most employees get 12¢ per hour more, with skilled trades and tool makers receiving 15¢.

Bell Aircraft Corp. has delivered two Model 470B helicopters to British Aerospace Airways, and has shipped all but two of the eleven aircraft ordered by Turkish Aero Y. Representatives of Argentina.

Lockheed Aircraft Corp.'s recent \$2,500,000 order for 12 F-80E jet fighters for the Air National Guard, brings to 1,099 the number of its jets in order. Company is turning off an employment drive to approaching completion of Constellation as order. Company payroll at about 14,000 was down to 13,000 in July by end of year.

Southern American Co., Dallas, has acquired two oilfield large tanks at Love Field to store them while the use of its personal maintenance and storage facilities.

Boeing Aircraft Co. has signed a contract providing for complete servicing, maintenance and modification of Alaska Airlines' Seattle-Portland line of five DC-8s and seven DC-7s. Work will be done by the year-end Boeing Seattle Service Center.

Consolidated Vultee Aircraft Corp. has as the top executive removal of the Convair Lines, being constructed for an unnamed Mexico City customer. Company is entering the Mexican market.

Universal Aircraft Co. has been formed in Tulsa, with shops at the municipal airport, for aircraft modification. It has converted a Douglas A-24, and has contracts for a B-17, 10 A-24s, seven B-15s and four C-47s. Company is headed by Donald H. Roberts, a C. Huntington and Robert Dwyer.

Nucleon Industries Ltd., Edmonton, Alberta, has new contracts to supply, produce, repair and maintain with the Canadian government and private operators which will employ employment to between 400 and 500.

O'Neil-Wilson Manufacturing Co., Inc., City, Miss., has issued a 48-page booklet illustrating and explaining its line of 10 A-24s to deliver precision die-casting machines. It is available on request from the manufacturer.

Gilman Bros., Los Angeles manufacturer of General Consolidated Aircraft's leading engine unit, on Sept. 1 will open a CCA training school for the U. S. Air Force at March Field, Calif. First students will be 240 from USAF and 12 from the Royal Canadian Air Force.

agreement was finally reached

The 3,500 workers offered are production, maintenance and defense workers. There are 10 in the letter category. They received an additional 5¢ an hour.

Goodyear Wins Sell

The Goodyear Aircraft Corp. of Akron has won a \$100,000 (plus profit) development competition contribution. Judge Charles A. Leach of Congress House Court ordered the Office of Aeronautics Competition officer to award that amount to Goodyear as a contribution to future pilot contributions.

The RAC added that Goodyear should reimburse 27 percent of its payroll for a total employed at two new plants in 1942 and 1943. Goodyear had it was entitled to a lower rate of 1 percent provided under the award saving system since it was an old and established firm and not a new venture.

GE Equipping Six Transports

Contracts totaling \$2,754,000 for air mail equipment in six commercial transport planes have been awarded by General Electric Co.

Equipment contracts were an order as follows: \$538,000 for the Douglas DC-6, \$1,500,000 for the Boeing Stratoliner, \$110,000 for the Boeing Stratoliner, \$100,000 for the Convair 440, \$100,000 for the Lockheed C-54, and \$100,000 for the Lockheed C-54, delivery version of the Constellation.

This brings to a total of about 15,000, 000 GE's equipment contracts, including \$10,000,000 for Convair 440s and \$2,000, 000 for the Stratoliner. GE's contracts include engine and turret movement, as well as instrumented engine and alternating current electrical equipment.

NEW AIRCRAFT

Fokker Completing New Trainer

Two or three-place Instructor for primary work nears flight test stage in fast-evolving Dutch industry. Company reports orders for 100.

Specifications and data include

	Standard	Two-seater
Span	26 ft. 6 in.	
Length	30 ft. 11 in.	
Height	7 ft.	
Wing area	194 sq. ft.	
Empty wt.	2,670 lb.	2,855 lb.
Loaded (and 50 with parachute, or 2 without)		
(standard)	3,000 lb.	3,200 lb.
Fuel (50 imp. gal.)	220 lb.	235 lb.
Oil	27 lb.	27 lb.
Engine	100 hp. (110 hp. max.)	120 hp.
Blower w/elec. starter and supercharger		
BHP (max.)	1,710 hp.	1,250 hp.
Wing loading	122 lb./sq. ft.	122 lb./sq. ft.
Power loading	12.57 hp./sq. ft.	12.57 hp./sq. ft.
Max. speed, sea level	232 mph.	225 mph.
Cruising speed	196 mph.	190 mph.
Highs. elevator, cruising speed	6.1 g's.	6.1 g's.
Range	210 mi.	425 mi.
Climb to 5,000 ft. (3,000 ft.)	5.1 min.	4.5 min.
at 5,000 ft.	13.1 min.	15.0 min.
at 10,000 ft.	22.0 min.	30 min.
Service ceiling	12,000 ft.	11,000 ft.
Service ceiling	15,000 ft.	15,500 ft.
Takeoff run (with 50-gal. wing)	245 ft.	300 ft.

Showing completion at United Dutch Aircraft Factory Fokker at Amsterdam is the new Fokker Dr.1, a two-place primary trainer.

Normal seating is for two persons side-by-side, but immediately aft of the overstrut structure a third seat of simple construction can be added for observation purposes. The biplane-type canopy slides aft for entrance and exit.

The all-metal cantilever wing is of single piece construction, carrying blow-coated aluminum and naturally oxidized metal skins. View loading port, according to late reports, is of stressed suspension construction, thus saving somewhat from the aircraft's empty tonnage. Hydraulic suspension system, thus saving somewhat from the aircraft's empty tonnage, has been tested. Hydraulically operated brakes and steerable tail wheel are provided.

Frontage is of welded steel tubular construction, fitted overall. Engine cooling is built up of easily removable panels to facilitate inspection and maintenance. The power plant, a 100-hp. Lycoming O-435 A, is mounted on a welded steel tube mount. An electric starter is provided as standard equipment.

Vertical fin and rudder are built of light metal construction, with the stabilizer having a single internal brace to the fuselage. Fuel oil and elevator have light metal spars and ribs. Motor, control, elevator tone tube is adjustable in flight, thus on the rubber is adjustable on the ground.

The company reports that Fiat Dagoni-Vergasani N. V. has ordered 500 of the type, and negotiations are under way with the Dutch government for further orders.

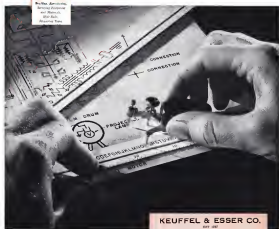


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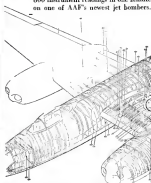
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Recording Test Data on North American B-45

First story on methods of recording 26,000 instrument readings in one minute on one of AAF's newest jet bombers.



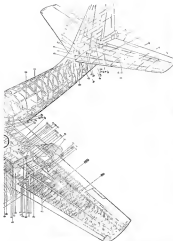
COMPACT RECORD One of five photo-recorders, the unit is fitted in small space by use of mirror to reflect 55 tape instruments. Camera (lower left), has distance-measuring sensor and is mounted on adjustable rails for exact alignment. Five photo-recorder units cover total of 120 instrument dials.



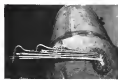
TYPICAL RECORD Film strip from photo recorder shows in first and fifth vertical rows micro-sensitized measuring and/or dials. At bottom of fifth row is accelerometer recording vertical force up to 11 G. Middle row data give gyro instrument readings of yaw, roll, pitch, engine torque. Small data give engine surface engine data points are picked up by radio indicators.



TESTING POWER Supplemental electricity is required to operate recording oscillographs and provide recovery voltage for sensor gauges. For this purpose eight jet B-45 mounts in 3rd section two 24v- and four 12v- batteries. Note closeness of structural design to this first published photo of camera structure of North American bomber.



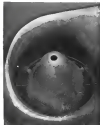
STRAIN CAGE RECORDING Mounted by Burns, Roe, Consolidated Engineering Corp. recording oscillographs are three three bridge balance units, mounted on top of each other. Each bridge-balance has twelve separate channels and 40 coils from these units connect to selected points on strain gage terminal board seen in background.



MEASURING JET EXHAUST Pressure tubes leading to standard steel scale mounted in tail pipe of B-45 engine are connected to sensitive recording micro-ampere gauges made by Rohrbach. Gauges are vertical and cover range of from 10 to 100 in. side every absolute. Gauge did not have pointer, larger reading 10 revolution covering 100 full cycles from per revolution.



SELENIUM MOUNT Seleno transmitters are heated by heated steel tubes in B-45 engine and system. To provide extreme accuracy of readings, each transmitter actually radiates in two air flow one passed in center at four times speed of other. On indicator dial is photo resistor; can generate millivolts. First two junctions to use selenium of solar power.



MEASURING INTAKE Six specially located pilot hole tubes are shown mounted within B-45 engine to read flow. For measuring air flow at this point. Photo resistor shown in connection to P-1 sensitive air speed indicator follows then direct reading pressure gauge. Kerosene cooling and greater accuracy was obtained.

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BALL BEARINGS
for aircraft

New Plant Practices Cut Costs

Salvaging of expensive hydropress pads and simplifying router operation give substantial savings in Ryan production.

Through a single method, Ryan Aircraft Co. now recovers the wear rubber forming surface of a hydropress not greatly cutting operating costs and lessening processing problems.

In normal operation, the rubber pad-on roller thick and weighing several hundred pounds—dramatically becomes built, closed in the metal parts of forms. Gradual process was to reuse the pad in the press and when serious side wear wore, the pad was discarded.

Inspection showed that the grid center pattern—about four inches thick and containing approximately two-thirds of the pad's main—was practically unaffected by wear. To further reduce the risk, the closed surface was ground down for about one inch (see left photo) and then all new rubber volumized on each side of the pad, affording constantly a new seal. Recrosshoning was suggested by company's R. W. Buehl.

► In another production study, suggested by G. David Blaupais, changes to assemble

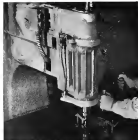
pilot legs on cockpit at Ryan reduced time between cost and increased damage to equipment.

Cutting short metal on the sides is accomplished by loading material to the bar—a revolving cutter. First, consisting of cylindrical steel bar located in the machine table, and next in a guide for the rotating block, is an extension of a barrel locked in table (right photo). Formerly, when pilot was damaged, it was necessary to remove the entire barrel—a difficult job, frequently resulting in further damage to tool and pilot when latter was knocked out of holes.

Pilot is now made with top held in barrel by Allen set screw (bottom). One side of the shank is rigidly held in to accommodate bar caused by the screw, which would otherwise bend the shank. Effort is hoped from below for quick removal of tool.



INDICATED BY FINGER is area where 1-in. layer of new rubber is released to aid hydropress pad to boost its life.



IN ROUTER OPERATION wire last, removable pilot tip correctly routes block and guides work.



CLOSEUP OF ROUTER PILOT showing visible removable tip, Allen set-screw and tip, and operator end.



Fig. 1 Modified Boeing B-29 used as flying test laboratory with General Electric TG-100 (J85) engines lowered to test position.

Flight Testing Gas Turbines

Procedures and recommendations for final step held necessary for complete engine evaluation.

By W. O. MECKLEY, *Aircraft Gas Turbine Div., General Electric Co.*

Installation of the gas turbine for aircraft propulsion has brought new limits of testing procedures and techniques, and rapid development of new jet engine models has brought extensive testing programs to adequately evaluate and prove new designs. To adequately test a turbine requires that the engine be operated from sea level to 35,000 ft pressure altitude, at air speeds ranging from -70 ft to +450 ft, and at flight speeds as high as 700 mph. These conditions can be imposed upon an engine either by flight testing or simulating flight conditions in a wind tunnel. It has been found that to adequately cover only directly pertinent needs of today's new designs is an extremely slow and consuming process, a process of at least three different vehicles—the flying test laboratory, altitude test bed, and altitude simulation—should be used.

These three vehicles are those previously mentioned for conducting complete engine operation and performance. It is equally important to operate each component of the complete jet separately to obtain its basic characteristics.

► **Flying Test Laboratory**—Existing airplanes have been modified for the purpose of installing and operating a gas turbine alone through one test runway to simulate flight of the airplane. One such airplane (Fig. 1) is a B-29 modified to install a General Electric TG-100 (J85) engine in the bomb bay. In this installation, the engine is lowered below the airplane when not in use, and is lowered below the airplane when operating.

Utilization of flying test laboratories to test gas turbines has proved to be a safe and expedient way to conduct accuracy as gas development testing under altitude conditions. The maximum contribution of such a test vehicle is to test new gas turbine models before any substantial amount of flying use is achieved to actual aircraft as indications of the propellant, and to explore

a greater range of operating conditions not so possible in a single-engine airplane. With complete development engine components are available before the new engine is complete, it is then possible to conduct flight tests of the components in various parts of aircraft such as to work up a complete engine. The same limitations of a vehicle such as this are relatively less on speed and operational altitude.

Stress results are integrated as a flying test laboratory program are:

1. Investigate limitations of operation for various altitudes up to the maximum air temperature and pressure to be expected in the final aircraft conditions of the particular engine, including accuracy of test results in engine turbine, burner, flow-out, engine, acceleration, and simulating characteristics.
2. Establish limits of stability of various developmental engine control system under flight conditions, including checking and use of accuracy and initial engine tests.
3. Establish characteristics data for gas turbine components and burner only to compare with temperature ratings from sea level engine to cold air at high altitude.
4. Establish sea operation of various methods of thrust augmentation such as water injection exhaust, augmented turbojet, water injection, and water-injected turbojet.

In addition to these uses the flying test laboratory provides an excellent means of acquiring design guidance with the push into altitude, to flying and with actual experience of live designs in flight.

► **Altitude Wind Tunnel**—A new turbogenerator can be installed either in a specially constructed wind tunnel or in a modified aircraft installation, and the conditions simulated in a wind tunnel above altitude pressure, temperature, and flight speed are all simulated. The best example is the wind tunnel of the elements to which are

lated flight operation can be carried in the NASA Ames Propulsion Research Laboratory Altitude Wind Tunnel in Cleveland. Use of this altitude wind tunnel has been extremely valuable in extending the range of turbogenerator testing before installation in the final aircraft installation. Such a facility appears to be most valuable in complete performance evaluation and operation of specific engine design after the development work has been completed in the flying test laboratory. Accurate readings of temperature pressure, and air and fuel flows can be obtained from time to time in the final installation.

The ground engine tests to be conducted before tests listed for the flying test laboratory, except that the performance, starting, acceleration, windmilling and fuel character studies of a specific engine can be evaluated at higher altitudes and high simulated flight speeds. The tunnel is better suited than either the flying laboratory or aircraft installation in conduct fundamental work on such important data as reduction system and engine inlet exit, thrust augmentation, and speed of sound measurements.

► **Aircraft Installation**—When the highest in-flight installed in the airplane for which it is intended, its characteristics should be well evaluated and its operational limits well defined so that initial flight tests of the new engine can be carried out with a minimum of engine over-stress. A major part of the initial tests will consist of such as accuracy of thrust and engine characteristics in engine control and performance, and life tests, a suitable for engine engine tests.

Flight test engines are instrumented as completely as possible using extensive photo cameras and temperature readings to obtain desired engine and engine data and usually are equipped with windmills to measure rapidly fluctuating stresses and gas areas. Space installation and storage of more than a minimum of human beings usually limit the number of channels to be investigated on one flight to below that possible in either the flying laboratory or altitude wind tunnel.

Specific stress to be investigated development materials have already existed in the previous two facilities. Issues such as jet fuel, compressor problems, burner heat, engine windmilling speed, engine and



Fig. 2 Maximum speed for altitude starts with engine windmilling.



Fig. 3 Variation of allowable maximum engine speed with altitude.

accelerations may be reflected overboard by the particular installation's attitude data and by logs, dials, and suitable engine test gear or data to determine what these data mean of any, as. Characteristic limits to engine speed attention in flight test are investigative problems in and avoid the engine component, low conditions and power recovery in the engine data under different engine conditions, and performance of inherent and fuel system with respect to temperature and pressure in the heat. This latter is important to ensure satisfactory operation during high-altitude operation.

► **Gas Turbine Characteristics**—The following details are important items investigated:



Fig. 4 Typical operating data with constant fuel jet nozzle, constant altitude. (Fig. 4 is an curve also adjust gas temperature.)

as both operational and performance in its

1. Starting and maximum speed operation showing essential results in flight at high altitude is a critical engine problem. In general it may be said that accuracy in either altitude or flight speed reduces the probability that successful starts can be made.

Fig. 2 illustrates this effect in observed data, e.g., wind speed tests of a turbogenerator in production. It is important to obtain in formation concerning flight starting as first the flying laboratory or wind tunnel is first any limitations may be brought to light in this engine flights in an engine dependent on its operation as made.

Maximum flying speed at the engine is determined at that point at which one or more conditions become engine limits. This maximum speed limit (which could be known theoretically) is approached when the turbine is thrust to reduce speed. Side flying speeds tend to increase rapidly with altitude and an effect on engine by high wind speed. A maximum speed altitude such as at shown in Fig. 3 is usually determined in either a wind tunnel or flying test cell prior to actual flight test.

1. Acceleration tests are conducted to determine the maximum rate of engine acceleration without exceeding engine torque gas temperature limits and to determine maximum inherent and maximum engine speed for practical acceleration tests. This time is required to accelerate the engine between greater with increasing altitude because, though the mass of engine to be accelerated remains constant with altitude, the load available for accelerating the turbine and compressor increases as the gas density decreases. Fig. 4 and 5 show typical acceleration data obtained during evaluation.

1. Operation of a turbogenerator is a wide range of altitudes and sea pressure as great that the control system provides data on operation and performance comparisons for these changing conditions, so that actual control will not require a continuous adjustment to meet various during a flight. Items necessary for evaluation are: stability of the system at all speeds and altitudes, characteristics of engine speed variation at a given position at the point of desired test variations in phase speed and altitude, reduction of the effect of the maximum speed during operation, which should be a specified limit regardless of phase speed or altitude, determination of satisfactory operation of control system at extreme temperature (at least -50°F).

1. Performance tests are necessary to confirm the best overall design of a new turbine jet, but not usually by properly matching component efficiencies of compressor, combustion chamber, and turbine. Altitude and sea effects on a new design cannot be accurately evaluated and engine performance estimates either confirmed or modified as dictated by the test results until the engine is either flown or placed in a wind tunnel.

1. One of the most important phases of performance testing is the determination of



Fig. 5 Effect of altitude on acceleration time.

jet thrust at high altitudes and the effect of time on jet thrust. Data obtained to date (Fig. 6) indicate that at low engine speeds, jet thrust in the engine is reduced as the altitude, while at a sea level engine speed, sea level relatively little effect. Because of the increased jet thrust with an increase, the corrected specific fuel consumption is lower at all engine speeds under sea conditions of flight.

In connection with jet thrust, it is of interest to the engine designer to know also the net thrust of the installation, which is determined by subtracting the momentum of the air flow passing through the engine (also known as ram drag) from the assumed jet thrust. In general the effect of ram is to reduce the net thrust of the sample and increase the jet specific fuel consumption. This should not be overlooked in evaluating the overall jet cycle in the least efficient of high speeds in which thrust losses are considered their much more than.

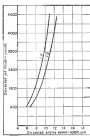


Fig. 6 Variation of jet thrust with sea pressure and jet nozzle altitude. (Fig. 6 is an curve for sea pressure only.)

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DATA FOR K-45 AND K-51 CABLES

Physical Attributes (M/1000)	K-45	K-51
Imp. 50 Ohm	—	1.9
500 Mc	2.0	2.4
100 Mc	4.0	7.0
400 Mc	3.2	15
1000 Mc	6.5	—
5000 Mc	50	—
Characteristic Impedance—Ohms	50	49
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Acceptance And Service Testing For Vibrator Power Supplies

Important steps in checking vibrators to insure compliance with exacting purchase and maintenance requirements for aircraft radio installations.

By W. E. PRICE, and E. M. HASSELL, Sperry Gyroscope Co.

Increasing importance of radio equipment on all types of aircraft is putting constantly greater stress on perfect functioning of all components. This is particularly true of vibrator units of which there, no doubt, are being adapted.

Many aircraft owners and other types of electronic equipment depend on vibrator power supplies for converting low voltage ac into the higher voltages suitable for operation of radio tubes in standard base sockets. Some types of apparatus use vibrator for converting low voltage d.c. into ac power for motor operation.

Proper design of a vibrator power supply into a motor circuit, a given power is required will frequently require low speed than an equivalent motor generator supply. Electrical efficiency is usually higher but at the initial design a motor is often the difficulty of obtaining satisfactory low speed in high speed motor.

Operational conditions of a vibrator power supply must be better considered as to material, input, impedance, transformer, losses, heating, and flowing components that is usually required with a motor generator. Because of transformer and characteristics and choice of heating components to meet all source, normal operation of a vibrator power supply is more than a given. The acceptance that the vibrator pack is operated under a relatively constant load. Proper power source, must be maintained so that the vibrator pack has an even, low impedance circuit. If the impedance is not met, as when transformer operating equipment on the source's generator, the vibrator contacts will spark violently, and wear will be increased into what may be only a short time. The condition may be partly corrected by substitution of very high capacity electrolytic capacitors across the supply terminals, but under normal conditions, the power factor of each capacitor is sufficiently high so that a light loading of source impedance to the vibrator cannot be altered. Vibrator transformer loss losses are usually a matter of design changes achieved by operating the unit at low line density.

Vibrator application and type may be roughly divided into three groups: (1) single primary vibrator with a tube rectifier to the high voltage, (2) synchronous or self rectifying type, and (3) ac supply as existing power circuit, shown in Fig. 1. Precision Vibrator Requirements—To insure uniform and trouble-free operation, after exacting purchase specifications must

Frequency—The speed vibrates at 100 cps with these tolerances:

- At room temperature and 11.25v input, 4.5, -1.2 cycles; and at 19.6 and 11v -1.1, -0.5 cycles.
- At -40 deg. C., not more than 1.8 cycles higher than frequency at room temperature, but not exceeding 107.5 cps at 11.25v input, nor exceeding 131 cps at any input voltage from 10.5 to 15.

Vibration—When subjected to vibration at any frequency from 10 to 15 cps, with an amplitude corresponding to an average rate of 90", there should be no change, or change in electrical specifications.

Life—After 500 h of operation at 11.25v input at room temperature, it should meet same specifications as required at a new unit.

Sealing—The unit should be sealed to exclude dust and insure freedom from damage.

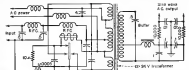


FIG. 1 SCHEMATIC DIAGRAM OF AC-POWERED VIBRATOR SYSTEM



FIG. 2 TEST SET for checking ac-powered vibrator

Lycrosing Model S-150
Normal Model 20 SHF

Learning Model 0.256-C
Normal Rated 170 BHP



Lycoming Model O-290-A
Manufactured about 1965-1969

Agreement Model B-635-A
Normal Rated via RRR

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PRODUCT

LYCONING DIVISION—AYCO MANUFACTURING CORPORATION, DEPT. 88-9, WILLIAMSPORT, PA.

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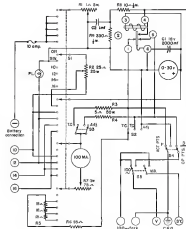


FIG. 3. SCHEMATIC DIAGRAM of test set for various schedules.

is normal handling. All be filled with rubber. Fictive vibrator and its container is less, or equivalent, and not that the frequency when it damped does not differ by from the frequency when damped.

Pitney—The container of liquid, or plastic, to maintain or conserve in position.

Time Chained—Ratio of the duration of the off-cycle which analyses were collected to the interval when power coasted. Chatter time on one side of the road was 13.1% of the total closed coast time, 13.1% and 36%.

Time Chained—Ratio of the time of each contact to the cycle of vibration should be at 13.1% input, and from 18.6 and 36%.

► **Witness Test Methods:**—Conducted in such a way as to both the requirements of equipment and such controls be applied. Original accuracy

source tests of vibration may be manually conducted with the same apparatus and accordance with general specifications. A test set suitable for checking a vibrator of the type previously described in the purchase specifications is shown in Fig. 3. Other components required for this test are a frequency shifter (in this case a General Radio power line) adjustable type battery, time former, and a 4-m. oscilloscope. The size and cost of a shaker is shown in Fig. 2.

Testing whether the plate supply application does not require the presence of a vent used for venting a.c. power applications in construction of such a plate supply power pack, the lead should be adjusted to maximum that may be encountered in the use of the voltage and making the most efficient

[illegible]

may and secondary contacts be done in improper sequence resulting in output loss and logic contact loading.

Function and application components of the pressure vessel at test start-up, hours at test methods will be described, with reference to the test set shown in Fig. 2, together with the auxiliary components.

Stirling College—Pondside Rd. (Fig. 1) to museum village and place St. V. pasture. Adverse Rd. until the road starts—must start at least then, by

Frequency.—Switch S1 to 10 V, and adjust R1 for 1.25 μ s input width and 30 dB closed to T1, and S4 to P. Switch S2 to 100 cycles and set microphone sensitivity for external calibration. Connect the microphone to the oscilloscope. Carefully adjust the oscilloscope sweep control until the pattern at A in Fig. 4 sweeps 50 to 100 μ s and advance the transducer about 10 cm to about 10 cm on the dial. With a stop watch, measure the time for 100 cycles of the cycle pattern to move off the scope face. Its cycle rate is shown in Fig. 5, the difference in cycle rate of the vibrator from the fork may be obtained. With a standard scope, drift to the right will be caused by the vibrator and drift to the left will be caused by the fork. The indication of frequency below 180 cycles.

Adjust S1 and R1 in combination to obtain an input of 10 μ s and 15 and repeat frequency test. Frequently recheck sweep range and microphone against fork.

Repeat, shift

Time Constant—S1 and S4 are adjusted for 13.25v output. Close S3 to TC1, S4 to 1, on S3 to VIB. Adjust R7 for full scale with S2 and ADJ. Switch S2 to voltage point 2 and then to 3 (TC and TC1 and read time constant directly on the millimeter. Repeat at 10.6 and 16v.

Chadwick: With the patching average went and the time constant clock, inspect the western developed across the land system with 84 an ACT FIS Pattern should be square and have the lines at the top and bottom as shown in Fig. 4. Faintness or breaks indicate that power contacts are bouncing or not closing properly. By one of a square wave to 'logic', determine that total break long does not exceed 10% of total half cycle time.

Switch 54 to OFF PPS, and observe pet trees developed by the root darts contacts. Petals should be symmetrical and base of buds as follows:

In original acceptance tests of these valves, they are also given a brief operating test—overheated to 185 deg F and then roughly tested hot. They are then cooled to room temperature and checked in the same

► **Service Checks**—Following is a summary of maintenance checks which may be performed, effect of a given malfunction on equipment operation, and adjustments that may be made to aid correction. (These adjustments may be made by removing the dust cover of the vibrator—usually requiring a special service addresser key.)

From the press: 303



1. Bauxite from South American deposits is unloaded and stockpiled at the Bessemer plant of The Permanente Metals Corporation, where it is converted to alumina. The plant, located on the Mississippi River,

converts 26 buildings on a 200-acre river site, is capable of receiving and processing 200,000 tons of alumina per year. It requires four pounds of bauxite ore to make one pound of alumina.



2. It isn't alumina yet—but this view in the Bessemer plant shows the final step in processing. Three giant rotary kilns operate at 1500 degrees F. and send the alumina to three mills where alumina powder. This alumina is then heated into hot cast and pour by rail to Permanente Metals' reduction plants at Spokane and Tacoma, Washington, where it is converted into basic aluminum.



3. Spokane, Washington, is the home of the reduction plant of The Permanente Metals Corporation, where alumina is made into basic aluminum. Another reduction plant, at Tacoma, maintains the capacity needed to keep the Spokane rolling mill operating at capacity. Its alumina process requires tremendous power. Metal is cast into pure aluminum pigs, then sent to rolling mills for extruding and alloying.



4. The rolling mill at Spokane is capable of producing more than 200 million pounds of aluminum yearly. Twenty inputs of different aluminum are blended into long strips. Cut into sheets, the metal is cold rolled to proper specifications. Careful handling and constant string control ensure quality. This plant comprises 53 acres. Then, sheet and coil is cut and stored directly into case for shipping.



5. Here's why Kaiser Aluminum is so desired. Permanente Metals' representatives really give service. Delivery promises are kept. Quality is made specifications. Top technical brains are always at your service, and you get your own through word advice. Through Permanente Metals, you'll find out, year after year, that aluminum sales, engineers and questions have had years of experience in the aluminum industry.

KAISER ALUMINUM

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It's something of an achievement to turn out, in a single year, almost as much aluminum as the entire industry produced in the most productive year before the war.

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But as pictures and text can convey to you the experience of this tremendous organization to serve the users of aluminum... in today's toughest conditions... to take its place as a vital factor in this age of light metals.

Kaiser Aluminum is a product second to none—not merely as a substitute for other metals and materials, but as their successor in the sense of applications where aluminum can add something new: lightness, strength, workability, resistance to corrosion, beauty.

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Ready to serve you—today...

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Start voltage—High starting loads, such as engine cranking and radio transmitters, apply stress to the battery and cause battery voltage to drop. The power source must respond by increasing its function period. To meet this across conditions, several vehicles must "share" at a very low voltage, also the car may be pulled in one ride or that a power source shares the battery across through the two low resistance winding of the power transformer, resulting in a blown fuse as a failure. Starting voltage can be controlled by adjusting drive current going to place the car and closer to the drive rail. Controls may be adjusted with relay load and speed to eliminate of vehicle impacts.

*Slowed time of
a century or more*



FIG. 4. PROPER WAVE PATTERN for maximum type reflector

Frequency—The geranium, *chrysos* described is used in an automatic radio direction finder which is phase oriented, requiring a high frequency accuracy to obtain optimum apparatus performance. Bought e.g. power components may well tolerate a frequency drift of $\pm 5\%$, while supply voltage variations should be held to $\pm 10\%$, at design frequency. Variation beyond the limit will decrease balling efficiency with increased contact wear. Feed frequency may be adjusted by adding or removing a bit of solder from one end of the feed.

Time of contact—Percent of total cycle time that the power contacts are closed is basically a design characteristic which must be held to a reasonable limit of design error to insure single power output, low contact current, and proper frequency in respect to output characteristics. If time constant is too high, excessive sparking between the power contacts by breaking their support springs while keeping contacts parallel. Also such adjustment reduces frequency at standard voltage and 30% utilization. In the previous circuit discussed, the power contacts are in parallel, and the load is connected to the bus that has no contact at once, otherwise, a event will be placed in the real time, reducing the circuit's use.

Cluster—Contact cluster at houses may take several hours. Frequently, contacts will be home at the time of dosing and come back in the pattern at the beginning of each half cycle. In other instances, waking action of



FIG. 5. TIME-FREQUENCY chart for comparing relative and link rms difference.

the contact when duty or patrol may cause a break in the middle of the closed hose pattern. This contact nose should be kept to a minimum since it may well be a source of contact sparking, with resultant contact heating and interference to the equipment. A large hook at the center of closed contact trace will assist holding action with across contact sparking. Points may be cleaned and squared with very fine, low flat file. The operator that controls closed trace and checks that they remain parallel throughout swing of the rod by tracing around arc of foot and thumb, instead of pulling

Let us point out that the above-mentioned capacitor will be connected to the main capacitor as possibly be made to obtain good service life. In routine maintenance work, it is well to turn to a standard of performance on a test jet, and upon special repairs and its unusual power can cause such an accident before releasing equipment to the line. In maintenance work on the capacitor, the capacitor must be shorted and then the associated resistor must be checked. Having the resistor in good condition, the next element is the capacitor; this capacitor is then working under a certain current overload. Some positive type meters will show what voltage will open under overload. Oil-filled capacitors have been known to develop high leakage under operating voltage, but will check properly on service type capacitor tests. It is advisable to maintain a close watch on the capacitor and its associated plug to ensure that heating will not occur at some point to create a high or low current supply situation.



FIG 5 PATTERN of a.c. vibrator, across armature load.

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machines requiring high speed motor.



^aTypical applications for this material include: trial vacuum chambers, agitators, stems, and shaft seals.

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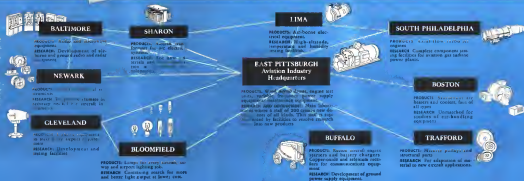
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New Luscombe Four-Placer Designed for Room, Utility

Farm and business uses are primary market goals for 165-hp. all-metal plane previewed at flying farmers national meeting.

By ALEXANDER McSHEELY

A sleek new all-metal sear to the flying farmer's program—a study now to operate multi-purpose farm plane—was announced last week by Luscombe Airplane Corp. at the National Flying Farmers Association meeting at Stillwater, Okla.

The high-speed, 165-hp. four-place Luscombe model 11 is being rapidly tested production are observed during a recent visit at the Dallas plant. A survey of the plant, made with Eugene Norris vice president, engineering on a recent Saturday afternoon when the production floor was not at work gave excellent opportunity to see just what features being prepared for the four-place line and components already beginning to take shape.

Demomotion of the new plane was scheduled on many parts of the meeting the fall, Luscombe H. F. Kline president, his announcement. Depending on certification, material flow and other problems the plane probably will come on the market about the first of the year or shortly before.

Price on the four-place is not definitely fixed, but it will be competitive, the company has reported. Since the lowest priced four-place now on the market is the Stinson Voyager \$65,000—adding the \$5,000 TAF—it is probable that Luscombe may also start out to sell for around that figure, although the white market for four-place four-planes may be dropped to around the \$50,000 mark by additional reported entries from Cessna and Ercoupe.

► Engines a feature. A recent survey carried out after by Continental Motors is a recent new factor in all four-place plane competition and may make Ansonville Motor a more prominent figure in the personal plane engine field. It is known that some of the designers, including Luscombe, have studies on models at their four-places using 165-hp. Franklin engines.

But the original Model 11 is powered with a Continental 405 and personally the production plane will be the power plant exclusively, at least until an alternate one inferior is obtained. Since the Stinson and a Franklin, the Voyager model have an al-

ternative at lower cost here. However the Luscombe has been designed from the new leading gear up for simplified all-metal construction and might well be less expensive to make than the welded steel-frame, fabric-covered Voyager.

Luscombe reports a cruising speed of approximately 130 mph, range of more than 100 mi. and states that the plane will carry four passengers and 100 lb. of baggage or without to full gear load (40 gal.) or will carry 600 lb. of cargo plus pilot and a full load of fuel. Additional performance data reported by designers include a top speed of 155 mph, landing speed of 57 mph, and 130 ft. per min. climb. Wing

span is 35 ft. and fuselage length 27 ft. All seats are movable to permit easy loading of large cargo through the side door to the 11 ft. x 3 ft. open space in the cabin.

► The Good Visibility—From the visible standpoint the new Luscombe is well ahead of any existing airplane we have seen. Large side windows give the usually restricted back seat passengers a chance to look out, and a large back window and two windows on the top of the cabin sides overhead visibility free of a problem then in most high wings. A big over-engineered windshield gives good forward vision, and the engine is mounted at an angle that lets the pilot see over the nose to about a mile or so ahead for 50 ft. to 100 ft.

Except for the high wing and the conventional fixed gear the fuselage of the new Luscombe looks a lot like that of the Stearman in general outline, a resemblance which is accentuated by the spread-of tail surfaces and the "steep" in the back where the nose ribs taper back to the tail. The Model 11 has more cabin room—both in width and length—than most of its competitors and it is expected to get a final cut of the plane that is to make these three windows open with additional vent-



New Luscombe Model 11 has outside cabin.

blown through ducts and a vent over the back seat.

The newly developed Lescage flexible landing gear, which also is being adapted to the two-place models in a light version, has already been subjected to extremely rugged drop tests and is expected to make both two and four-place models adaptable to rough terrain and rough-terrain airports.

Wing controls in the new airplane replace the stick controls which Lescage has used heretofore. A throttle wheel or a single wheel control can be used in the production version.

► **Designed for Low Cost**—The Dallas manufacturer has been working consistently to lower production costs and thus drop sale price to consumers. Presumably this policy will continue with the Model 11 on the theory that the lower the price of the four-place the bigger will be the volume of sales.

Going back to the Mustang Veegee—where it is the best seller currently in the personal plane market—analysts show that this is due not only to its relatively low cost but to the fact that it is one of the most reliable two-place planes for the solo pilot. It has a high rate of climb, excellent stall characteristics and other planes of its capacity market.

Lescage is looking to provide a plane with extra payload, room and speed that the Mustang, in spite of its many and often to fly and also give the important advantage of off-metal construction. If the Lescage can do all this and sell for around the same price or even lower it will quickly become a serious contender in the four-place market.

There have been a few criticisms already—and these probably will be more—of the fact that the new four-place's designers sacrificed a few of the sleek straight lines so dear to the heart of the aviationist in favor of more maneuverability and visibility. It is not opinion it is a good incident when maneuvered against the importance of visibility appear to ultimately lose value.

Granted that the biology, even with some drag, and cuts a few miles from the plane's cruising speed it is held that it is

compensate for more maneuverability, because of the additional room they will be better suited with the plane.

Perhaps the Lescage is the closest approach yet to a utility four-place to be sold at a low cost. If so, it can win public acceptance on matters if it is as safe as the old Ford Model T (which it isn't by any means).

Flying Features Requirements

Lescage Aircraft Corp. hopes its new four-place plane will fit the specifications laid down by the National Flying Persons Association (Aviation News, June 3, 1946) for four-place. Forest Wagon, NFAA president, says the flying features must:

- A plane built to withstand rugged use.
- Removable seats to provide extra cargo space for bulky objects.
- Storage.
- Large wheels and balance for easy taxiing and takeoffs on soft and rough ground.
- Doors that are locked, weather seals to be reliable.
- Seat cushions with more cushion for more baggage and comfort on soft and rough ground.
- Engines accessible.
- Quickly removable windshield.
- More power for precise angle-of-attack as desired.

New Wisconsin Bill

The Wisconsin state legislature has passed a bill expanding the power of the Milwaukee Civic Board for the strong and development of airports. This far-reaching provision gives the board the right to raise airport funding projects and to clear town roads in cases where roads impede the use of an airport. The bill permits the board to acquire land without the consent of local boards but preserves public access to private property affected by the closing of roads.

Solar Develops New Gas Turbine

A low horsepower gas turbine engine for auxiliary aircraft use in the commercial applications is under development at Solar Aircraft Co., San Diego, with completion scheduled about next January, the company's annual report declares.

Solar believes the engine can be used to generate electricity in large plants, as in a power source of power in automobiles or light planes. Company has also proposed design and construction of a large jet engine for light Navy craft.

► **Market Potential**—Manufacture of at least 100,000 for emergency powerplants planes will constitute the bulk of Solar's aircraft production, but its jet engine now, however, business is growing. Management is talking on future subject in further development, the report states.

Solar has several extensive military research projects in the jet field underway, in addition to development of its small engine. One of its thrust investigations, whether it is an engine cooling or control a method of using portable operating temperatures. A research contract on test rig new test contract allow to exhaust materials might have implications in jet work.

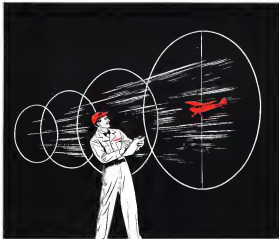
► **San Diego Branch**—With most of the research work carried on at the San Diego plant, the largest part of the activity at the Los Angeles factory is the manufacture of engine components, including pistons, exhaust valves and other parts for jet engines. The San Diego plant, which is about 100,000 sq. ft., also tests out some jet engine parts.

At the end of the war, Solar deliberately sought to diversify its business by adding new commercial products. It studied many, but finally settled on some before developing them, but continued others. Now it is still engaged in the manufacture of small auxiliary jet engines, in testing out the processing and design equipment. Further diversification may be found on necessary.

Because of the development of certain projects but because the company requires fiscal changes following the war were not fully completed during the period, Solar ended its fiscal year April 30 with a loss on operations of \$1,265,000 on sales of \$11,460,000. After carry-back and income position, tax credits, net loss stood at \$190,000.

New Beech Dealer

Carl Wooten, former Beech ground school manager, has moved to Weston, Florida, to become a Beech dealer. He is in Orlando, Florida to serve as distributor for Beech and several other aircraft. Plans have been made for branch offices in Jacksonville, Miami, St. Petersburg and Fort Worth. Wooten plans to organize companies to expand Beech's small, export program.



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Visibility, maneuver are features of new four-place Lescage



chosen for the King's Flight



Rear view of King's Flight Viking P.V. 246

Vickers-Armstrong's long experience in aircraft design and construction makes the Viking the safest and most efficient aircraft of its type in operation. That is why four Vikings were chosen to form the King's Flight, and used by Their Majesties the King and Queen and the Princesses during their South African tour. The Vickers Viking has also been chosen by British European Airways and other leading airlines.

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Mishaps Involving Larger Planes Boost Passenger Fatality Rate

Four accidents occur during first half of both 1946 and 1947 on domestic airlines; fair safety record still possible this year.

Passenger fatalities rate on the nation's scheduled domestic airlines probably will be higher during 1947 than in any year since complete safety statistics became available in 1939, but there is serious doubt whether the extent of the past seven months was noted the public, critics and investigators that have resulted.

By most official national standards the U. S. commercial record of 5.5 passenger deaths per 100,000,000 passenger miles during the first half of 1947 and 4.4 during the last seven months would be excellent. To some degree, American aviation operators are the victims of their own safety achievements during the past 10 years.

► **Passenger Rate—In 1946**, the domestic airlines had 5.5 passenger fatalities per 100,000,000 passenger miles, but that, since 1939's record of 1.2. Rate during the first seven months of 1946 through 1946 ranged from 5.5 to 5.66. Should the current go through the remainder of 1947 without a fatality, the rate due next (assuming a 20 percent increase in traffic over 1946) could be reduced to 2.1.

Cecil Batten, one of the few writers who also publishes complete air safety statistics, has drawn conclusively a higher fatality rate per 100,000,000 passenger miles than has the U. S. including aviation operators. Batten's series reported a fatality rate of 11.4 during the first seven months of 1946 and an average of 21.4 during the five years from 1941-1947. (Note: the U. S. national record since 1946 was 5.32.)

► **Comparison With 1946**—Dependably, as with the same number of fatal accidents—four—occurring on the domestic scheduled routes during the first half of both 1946 and 1947. Fifty-two passengers and 12 crew members were killed during the first six months of 1946, when of four accidents as noted, DC-3s flew involved and five crew passengers and 12 crew members were killed during the first half of the year, when three of the four crashes involved DC-3s.

In U. S. international operations, too, fatal accidents took place during the first half of 1947—the Pan American Airways crash at Miranda, Peru, June 19, when seven crewmen and seven passengers were killed, and the TWA's mishap March 11, when a crewman was killed through a Cleveland Airlines crew on the Atlantic.

► **Unrecorded Loss—Accidents involving**

unrecorded aircraft using competitive equipment accounted for some fatalities during the first half of 1947. Four were killed when a Northrop Air Transport Service passenger DC-3 crashed at Galesburg, N. J., Jan. 3; two died in a Bell, Army Air Corps airplane accident at Dover, Feb. 24, and one killed in an International Air Flight airplane accident at Washington, D. C., Feb. 5, and two in a U. S. Airlines C-47 airplane crash at Charleston, S. C., March 14.

While airplane accidents explored the headlines, a comparison with the national safety record this year is noteworthy. During the first five months of 1947, 3,765 persons were killed and 28,325 injured in railroad train wrecks.

Meanwhile, the President's special board of experts, to set safety the month's record new recommendations to prevent aircraft collisions with terrain. The urban is a direct outgrowth of the railroad crash record since first—the Capital Airlines (PCA) crash near Lansing, Va., June 12.

► **Emergency Step—June 12** Lands CAB chairman and chairman of the special board, and emergency steps are necessary to prevent pilots from "flying their way down."

tion for suitable instrument conditions is required or based on visual conditions.

The board urged that minimum-visibility and ceiling approach instruments should be standardized over each route flown by airline planes except in passenger airplanes. Some degree of standardization has already been achieved as within U. S. but the special board feels that nations also should standardize in view to safety growth.

► **Recommendations Listed**—It was recommended that pilots not be permitted, except in emergency, to fly below prescribed standard minimums in instrument weather conditions. Further, no discussion for instrument flight under these minimums would be used by the Traffic Control.

The President's board also urged that minimum-visibility altitude for aircraft engaged in passenger operations for low be raised from the present 800 ft. to 1,000 ft. above the terrain except for such special cases under the visual flight rule conditions as may be specifically authorized by CAB.

It was suggested that where pilots of passenger carrying aircraft, flying at or above the prescribed minimum instrument altitudes, encounter obstacles, conditions suitable for visual flight they were desired below such obstacles and continue their flight at altitudes down to 1,000 ft. above the terrain after receiving approval from Air Traffic Control for each descent. Thus, if pilots had a three-mile visibility and 1,000 ft. vertical separation from the clouds they now then proceed in accordance with visual flight rules at altitudes down to 1,000 ft. above the terrain after receiving approval from Air Traffic Control for each descent. The board also recommended that the existing flight plan



TEST FLYING STRATOCRUISER

New pilots of first Boeing Strato-Cruiser on test flight over Page's Summit near Seattle during its initial stage of testing phase, made seven flights in its many days.

Nonscheduled Lines

Renew Protests

New group formed to protect irregular carriers' interests against CAB regulation.

What may be one of the last attempts at organized protest against the increasingly severe CAB restrictions on nonscheduled airlines took form during the past two weeks as several of the irregular operators formed the Independent Air Carriers Conference of America and sought the backing of Congress and various organizations.

Latest revision of Section 202.1 of CAB's Revenue Regulations (the nonscheduled exemption) have brought the taxable operators, especially those using transport-type equipment, to a critical point, IACCA has declared. In a letter to the Veterans of Foreign Wars, the group stated that the new regulations (made effective Jan. 11) will prevent steady operations from remaining in business and may mean not only the loss of their planes but their losses as well sources of livelihood.

► **Formed:** Nonscheduled operators are formed by three and independent, S. W. Co. and, Cal. Seattle Air Charter, and Avion Corp. of Seattle. Though its general member, John P. Koh, Asst. Building, Washington, D. C., it has sent out letters to over 1,750 unscheduled operators pointing out effects of CAB's new regulations.

The letters state that it is the absorption of CAB's Revenue Section that Section 202.1 was promulgated. Because the Civil Aeronautics Act, item 4, requires, under the scheduled airlines naturally is exempted, and any interference by the regular operator would have to be unacceptably. IACCA believes current operations will be virtually impossible because of the later release of the nonscheduled exemption and declares that any unauthorized law suit more than a very few contents is likely to be classified as a common carrier.



REFUGEE FOR COLD NOSES

After experiencing record 40 days below zero temperatures last winter, Mt. McKinley Airways' commercial flights at Alaska Field, Anchorage, have completed a four-hour stop at Anchorage of another deep freeze from next January and February. One of the CAB's opened by MCA between Alaska and Washington state is shown above the new statistics. Traffic at Anchorage airport Merrill Field has nearly doubled over last year, with 12,750 flights (11,750 for 1957) and 207 aircraft and 509 air carriers) recorded during April, compared with 4,024 in April, 1956.

State Airlines Take

CAB Case to Court

State Airlines, Charlotte, N. C., has taken CAB's decision in the Southern Air Case (Administrative Notice, April 14) to the U. S. Court of Appeals for the District of Columbia. The carrier claims the Board denied its application and at the same time rescinded some of the routes there Airlines was seeking in Tidewater Airlines, Inc., which had never requested that route.

State asserted that CAB's decision denied it the due order and for having accepted by law since in the route of the Southeastern case was the company aware that Tidewater was a controller for a number of the lines it served. Petition for reconsideration of the Southeastern case was still pending before CAB.

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Laramie Accident Blamed on Pilot

The accident in which a MATS Air Transportation Service DC-3 crashed near Laramie, Wyo., August 10, Oct. 17 probably was caused by the pilot's decision to encounter his plane at a dangerously low altitude while extremely adverse weather conditions were still existing. In fact, a CAB report on the crash states:

A contributing factor was the pilot's negligence in planning a flight into an area in which adverse weather conditions were forecast without making adequate provision for a suitable alternate airport, the report stated. All 11 persons aboard the crashed plane from Oakland, Cal., in Newark, N. J., on a non-scheduled flight, were killed in the crash.

Blowing toward both his destination (Cheyenne) and alternate (Denver) had seemed to follow accurate air traffic conditions, and having been advised that Laramie weather was being reported below minimums, the pilot should have requested assistance from Laramie traffic in selecting another alternate, CAB declared. Instead, the pilot elected to attempt an approach at Laramie.

Failure of the pilot to be questioned further because of his reported attempts at sighting his plane with a runway at Laramie after having observed that weather con-

ditions there were extremely adverse (visibility 1/2 mile, ceiling 400 ft. with snow). Research in the pilot had about two hours' flight showed, it would still have been possible for him to proceed to a suitable alternate for a safe landing, according to CAB. In attempting to keep the field in sight while circling the area at a very low altitude the pilot evidently misjudged his position and the DC-3 by proceeding to its final approach, and before runway could be completed a wing tip struck the ground.

CAB Denies Bid For Free Rides

Two attempts by a Congressional committee to get blanket approval from CAB for free aviation air transportation have met with failure.

First, a bill with reports of Rep. Charles McNair (R., N. J.), chairman of the House Interstate and Foreign Commerce Committee. He sought free transportation to ports in Europe, Asia and South America for members of various subcommittees visiting to study routes about Congress failed to appropriate money for the trip before adjournment.

►Passenger Grant-CAB stated that the Civil Aeronautics Act prohibits granting the free rides requested. "The Act and the Board's Economic Regulations make no provision for free transportation of Post Office officials, airline employees and their families,

UAL Survey

Approximately two-thirds of the passengers riding United Air Lines planes during the period of a recent survey were "first fliers," of whom nearly matched were women.

Further breakdown of UAL's questionnaire showed that 71 percent of the passengers were flying on business or on a combination of official duties and pleasure, while 23 percent were on purely pleasure flights. The remaining 6 percent continued emergency cases.

Of the passengers flying out of transportation, 79 percent were men. Over half of the women flying part in the poll said they were on business trips. Age breakdown of the total: 78 percent over 30 years old; 44 percent over 40; and 24 percent above 50. Thirty-eight percent reported their income was in excess of \$5,000.

and a few others, but not Congressmen.

The Economic Regulations state that any carrier desiring special permission to furnish free aviation or foreign transportation for persons not specifically mentioned in the Civil Aeronautics Act may apply to the Board for such authorization. But persons seeking free rides can not apply directly to CAB.

►Prohibition Necessary—This step is considered necessary to protect the airlines from such abuses of free transportation in favor of certain in the military industry. Airlines requiring the law are experienced free rides can be fixed up to \$1,000.

CAB recently initiated an investigation of traffic filed by 17 U. S. and foreign airlines providing for free or reduced rate fares for persons in the armed forces, their families, travel agents and employees, officials and doctors at other camps. The Board felt that this provision might be applied to other categories of military personnel. Another investigation initiated by CAB will determine whether Pan American Airways, Foreign and other airlines can give free traveling money and foreign air transportation to exchange university students between Latin America and the U. S.

Immigration by Air

Transportation Air Lines has begun work on its contract with the Immigration at Canada to help extend a crucial inspection shortage in the Department (Immigration News, June 30). First TWA C-54 operating under the emergency landing near Toronto, Ont., last week with 10 passengers aboard.

CAB Denies Petitions

CAB has issued a supplemental opinion to the North Central Area case denying petitions for acceleration of its decision

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Peruvian Carrier Admitted to U. S.

Peruvian International Airways has won a foreign air carrier permit from CAB over the protests of U. S. carriers who argued that PIA is in reality just a Peruvian line but a company organized and controlled by American and Canadian citizens.

With Member Clarence Young denouncing CAB's admission of PIA to operate between Lima, Peru, and Montreal via London, Ciudad Juarez, Tijuana City, Panama, Havana, Cuba, Washington, D. C., and New York, Peruvian International is already operating its DC-7s between Lima and Havana. It hopes to inaugurate service to the U. S. and Canada with two brand new jets which it will have convincing evidence to one flight daily.

► **Top Official**—President and general manager of Peruvian international is Harold S. George, former lieutenant general in charge of the U. S. Army's Air Transport Command. H. S. Howell, Jr., formerly commanding general of ATC's Atlantic Division, is vice president in charge of operations. Active in TWA operations, and now a director of the line, is C. M. King, formerly president and chairman of TWA, president of Curtiss-Wright Corp., and president of North American Aviation, Inc.

According to the Peruvian government, PIA is owned 45 percent by Canadians, 33 percent by Peruvians and 22 percent by Americans. The owner's total of directors consists of four Canadians, three Americans, three Peruvians and a native Italian living in Peru.

► **Foreign Aids**—Under the terms of a bilateral air transport agreement between the U. S. and Peru signed last December, the U. S. was given the right to keep a foreign air carrier permit to a company designated by the Peruvian government if substantial ownership and effective control of the airline was not vested in Peruvian citizens. However, at Peru's request, the American State Department also agreed that the U. S. would abstain until the air transport permit was issued at least 50 percent by Peruvians and the remainder by citizens of the U. S. and Canada if within ten years 51 percent of the ownership passed to Peruvian citizens.

In his dissent, CAB Member Young expressed doubt that more than 10 percent of PIA's stock is actually held by Peruvians and had further in a possible that Coastair might obtain effective control of PIA. Colonel Artime, which led the opposition to PIA's request for a foreign air carrier permit, said in an official pronouncement in addition to questioning PIA's ownership and status, Colombia contended that radio in question did not justify the international route requested. Colombia expressed fear that PIA might compete unfairly with U. S. carriers by offering similar service between Washington and New York and Montreal and between Washington and New York and Havana at the Canal Zone.



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EDITORIAL

Shop Talk by an Editor

With apologies to those who prefer regular editorials, we shall restrict this page to shop talk notes on several editorial matters which are probably more important to the editor than the reader, but we must have our say to clear the air.

Official Denial.—Every two publications worth its salt publishes important information line with a high degree of accuracy. No publication, of course, is perfect. So the goal of the staff is to achieve an over 100 percent accuracy if possible. A magazine like *American Week* is concerned with reporting of facts and of industry opinions and trends. You would imagine that a magazine with an excellent accuracy rate would be a magazine of criticism, minority. That is not the case. It may be criticized for being the mark too often. *American Week* on March 5 reported discussions going on between high officials of TWA and Pan American "leading toward consolidation of the TWA and PAA systems." A reader pointed out this story with the comment that although Howard Hughes and John Oppie had had a meeting, the "speculative story is an extreme stretch" is not given credence in informed circles. But Mr. Hughes the other day gave the story considerable credence by verifying the information.

The *American News* story, which was widely said by the daily newspaper, was dated very emphatically by a TWA vice president in Kansas City, and the company's house organ, as you recall, carried a further warning denunciation of *American News*, our predecessor journal.

The official word appears emphatic that such reports were "careless and irresponsible" and "without reflective, proven value." We have decided since that Mr. John Collins may not have known who Mr. Hughes talked with. In which case Mr. Collins may have been sincere. But it does seem to show that companies which are among official denials of news stories have proved correct in overlooking the public and making it more difficult for anyone to believe honest details thereafter.

Industry Opinion.—Every industry magazine such as *American Week*, in addition to covering the detailed news, attempts to carry trends and opinions in the industries it covers. It does this to the best of its staff's ability. In our July 20 issue we reported in *The Aviation Week* page the consensus of U.S. air transport officials interviewed on the relative merits of certain aspects of the various foreign-owned airlines. Two airlines protested, as is their right, and we are pleased to offer their side of the matter in this issue.

Confidentiality and What is Confidential.—What is confidential matter? It depends on the person you ask, and where you ask him. There is not an act of *American Week* or any other publication which probably does not print many things which someone considers confidential. Otherwise there would be no press. The press is made no conspiracy law is possible. So it is no particular surprise to us that *American Week* has been accused directly and indirectly of publishing confidential information. Who doesn't?

The director of public relations of a large company wrote the business department of *American Week* the other day pointing out industry observers that in a new military air shop. He wrote: "So far that we object to the publication of that paragraph is putting it mildly. The status of the aircraft in question, as your editor and his staff certainly must know, is highly confidential. Nevertheless, so far as

we can ascertain, an effort was made before publication to check on the story or the confidential nature of the subject.

Frankly I think such frequent contempt for the rules is unacceptable . . ." etc.

In the first place, the editor would have appreciated if the letter had been sent to the people who write this magazine, instead of to the advertising department. No check was made with the company in advance because under such circumstances the company is not permitted to comment. The reference to rules is baffling (except as a U.S. government contractor this company, has its own rules, which are also those of the Army and Navy and some others).

In point time military and naval people place their own classifications of secret, confidential, restricted, and others, on their own business. These labels govern what Army and Navy and other Government departments and their personnel may and may not talk about publicly. As far as these Government departments are concerned, these labels are binding. Government contractors are under essentially the same restrictions.

Any nation in these peaceful United States knows that the confidential label is so formidable as the Government that it is dropped in virtually everything that has not yet been made the subject of a press release, including lists of office personnel. It is rather obvious that a promotion list cannot endanger the security of the United States. What else? Then the question of danger.

No one has struck at the heart of the company problem more convincingly than Gill Bailey Wilson, valued World War II first, devoted grandfather, author, and sage observer of life. "How strong is America in the air?" he asked the other day in his New York Herald Tribune column. "Everyone knows except the American people. The Russians know in detail. So do the British, and the French and the Soviets. So does every able intelligence system at every nation on earth. Everybody knows except the people who could do something about it, if they knew."

And why do they not know? That story, Gill Wilson says, requires every basic wonder with the Cold War idea that "what goes on in this military establishment is none of the common sense business." Against that idea, says our founding fathers set their faces when they required that the Secretary of War and Navy be civilians.

"Nevertheless," Wilson adds, "there has been a constant struggle within the military brass against men who did not understand that power—all power—in a democracy stems from the people." Historically War and Navy with deliberate purpose have not educated the people in everything that could be told safely. This is spite of the fact that such knowledge was unquestionably in the hands of the intelligence systems of other nations.

Gill Wilson desires now in a good psychological time for the military establishment in all branches to review the entire position of public relations and military intelligence. *American Week* agrees wholeheartedly.

In the meantime, despite those who say checks on two of our first Washington phone lines, *American Week* hopes to continue to inform the people and criticism people specifically, on the significant developments which run most to the credit, and perhaps to the rest of the world.

ROBERT H. WOOD



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As company transportation, the Beech Executive Transport pays its way—and returns a substantial dividend of rest and relaxation for harried executives to whom it gives the time and opportunity to get out of harness, now and then, for needed recreation.

There is a Beechcraft distributor near you with wide experience in company-owned air transportation. Ask him to study your requirements. No obligation, of course.



"Our business," says Mr. Bowers, "requires plants located hundreds of miles apart, from Massachusetts to Monterrey, Mexico, and from Macon, Georgia, to Oregon. The fast comfort of the Beech permits me and members of my staff to maintain a frequent, economical, and otherwise almost impossible personal contact with each of these operations. It is not uncommon for me to dispose of my morning's mail in Reading, visit our Elton, Maryland, plants, go to Macon, arriving in mid-afternoon to spend several hours there, then fly on to Honston, arriving in time for a full night's rest."



Beech Aircraft

CORPORATION



WICHITA, KANSAS, U. S. A.